

APPENDIX B – MANAGEMENT GOALS

Section 3.1 provides the INEEL specific management goals and objectives for the INEEL Infrastructure, Fire Department and Fire Marshall organizations and for those objectives and goals for air, water, wildlife/habitat, and cultures resources. Section 4 provides a comparison of management goals for each alternative. The following table (Table B-1) gives a more detailed description and comparison of wildland fire management objectives and goals.

| Table B-1. Comparison of management goals and objectives across alternatives. | | | |
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| Alternatives | | | |
| Maximum Fire Protection Approach Alternative 1 | Balanced Fire Protection Approach Alternative 2 | Protect Infrastructure and Personnel Safety Approach Alternative 3 | No Action – Traditional Fire Protection Approach Alternative 4 |
| Infrastructure | | | |
| Alternative 1 would meet most of the INEEL Infrastructure management goals related to minimizing the vulnerability of the INEEL personnel and property to wildland fire damage. In addition, this alternative would achieve Infrastructures' goals to minimize impacts on natural and cultural resources. | Alternative 2 would meet most of the INEEL Infrastructure management goals related to minimizing the vulnerability of the INEEL personnel and property to wildland fire damage. In addition, this alternative would achieve Infrastructures' goals to minimize impacts on natural and cultural resources. | Alternative 3 would not meet most of the INEEL Infrastructure management goals. While the goals for this alternative would protect infrastructure and provide Personnel safety, it would not minimize damage to natural resources. In addition, allowing wildland fires to burn would not meet the specific objective to control all wildland fires within their first burning period or to minimize the potential to impact adjacent public and private lands. | Alternative 4 would not meet most of the INEEL Infrastructure management goals. This alternative would not minimize the impacts on natural or cultural resources, nor would it meet the specific objective related to restoration of disturbed areas by pre-fire, fire suppression and post-fire activities. |
| Air Resources | | | |
| Alternative 1 would meet most air quality objectives; the possible exception being that aggressively fighting wildfires may necessitate greater short-term dust generation than the other alternatives. However, the reduction in fire smoke and post-fire windstorm-generated dust would more than offset any temporary increase in dust from firefighting activities. | Alternative 2 would mostly meet the air resource management goals since pre-fire and post-fire activities would meet all air quality objectives, and fire suppression activities would meet most air quality objectives. | Alternative 4 would not meet air quality objectives. Because only infrastructure would be protected, wildfires could be very large, with resultant major releases of smoke and dust. | Alternative 2 would not meet most of the objectives for air quality. Less emphasis on fire prevention would logically result in more fires. Fires would likely be larger than for Alternative 1, with resultant increases in smoke and post-fire dust emissions. |
| Water Resources | | | |
| <p>Alternative 1 probably would slightly improve watershed resilience, water quality, and result in smaller less frequent fires due to aggressive vegetation management and fire suppression. The impact of this alternative on specific management objectives are:</p> <p><u>Reduce risk of large frequent fires.</u> This objective would likely be met due to aggressive vegetation management and fire suppression.</p> <p><u>Minimize pollutant exposure.</u> This objective would not likely be met because use of fire-inhibiting chemicals would not be avoided near waterways. However, contaminated sites would be protected and restored even though the contaminated sites pose minimal risk.</p> <p><u>Minimize erosion.</u> This objective would not likely be met due to repeated disturbance of defensible space and T-roads, wide deep containment lines and firebreaks potentially near waterways and on steep terrain.</p> | <p>Alternative 2 would likely improve watershed resilience and water quality, due to aggressive vegetation management, MIST, soil stabilization, and restoration. The impact of this alternative on specific management objectives are:</p> <p><u>Reduce risk of large frequent fires.</u> This objective would likely be met by aggressive vegetation management.</p> <p><u>Minimize pollutant exposure.</u> This objective would likely be met by using the least chemicals for soil sterilization and weed control, avoiding use of fire-inhibiting chemicals within 300 ft of waterways, and cleaning up spills.</p> <p><u>Minimize erosion.</u> This objective would likely be met by stabilizing defensive space and road improvements, using narrow shallow containment lines and firebreaks away from waterways and steep terrain, controlling dust, and restoring sites.</p> | <p>Alternative 3 would likely decrease watershed stability, degrade water quality, and increase the size and frequency of fire due to lack of the following away from facilities: vegetation management, fire suppression, and restoration. The impact of this alternative on specific management objectives are:</p> <p><u>Reduce risk of large frequent fires.</u> This objective would not be met due to lack of wildland vegetation management and lack of fire suppression away from facilities.</p> <p><u>Minimize pollutant exposure.</u> This objective would likely be met because fire-inhibiting chemicals and response vehicles would be used near facilities only.</p> <p><u>Minimize erosion.</u> This objective would likely be met because T-roads would not be destabilized, and containment lines and firebreaks would be near facilities only. However, defensible space would be disturbed near facilities and restoration would not be performed.</p> | <p>Alternative 4 would likely decrease watershed stability, degrade water quality, and increase the size and frequency of fire due to lack of vegetation management and lack of restoration. The impact of this alternative on specific management objectives are:</p> <p><u>Reduce risk of large frequent fires.</u> This objective would not be met due to lack of vegetation management, during both pre- and post-fire activities.</p> <p><u>Minimize pollutant exposure.</u> This objective would not be met because chemical use near waterways would not be avoided and the potential for spills would be increased by attempted rapid response on unmarked unstable roads.</p> <p><u>Minimize erosion.</u> This objective would not be met due to lack of stabilization of defensible space, wide deep containment lines and firebreaks potentially near waterways and on steep terrain and that potentially</p> |

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| <p>However, dust suppression and site restoration would be performed.</p> <p><u>Protect water utilities.</u> This objective would likely be met by aggressive vegetation management before fires and sediment control after fires adjacent to waterways and wastewater facilities.</p> <p><u>Comply with standards and regulations.</u> This objective may be met through partial sediment control for storm water discharges to deep injection wells and waterways; functional wastewater facilities, storm drain systems, and flood control systems; and aggressive vegetation management improving soil stabilization.</p> <p><u>Use fiscal resources efficiently.</u> This objective would likely be met by avoiding expenditure of funds to fight large frequent fires, operation of impaired wastewater facilities, repair of flood damage, several attempts to achieve soil stabilization, and environmental fines.</p> | <p><u>Protect water utilities.</u> This objective would likely be met by aggressive vegetation management before fires and sediment control after fires adjacent to waterways and wastewater facilities.</p> <p><u>Comply with standards and regulations.</u> This objective would likely be met through sediment control for storm water discharges to deep injection wells and waterways, functional wastewater facilities, no chemical releases to waterways or deep injection wells, functional storm drain and flood control systems, soil stabilization, noxious weed control, and control of invasive plant species improving likelihood of successful soil stabilization with vegetation.</p> <p><u>Use fiscal resources efficiently.</u> This objective would be met by avoiding expenditure of funds for the following: fighting large frequent fires, improving 84 miles of roads, extensive restoration due to MIST, operating impaired wastewater facilities, repairing flood damage, unsuccessful soil stabilization with vegetation, and paying environmental fines.</p> | <p><u>Protect water utilities.</u> This objective would not be met due to lack of vegetation management and lack of sediment control adjacent to waterways and wastewater facilities.</p> <p><u>Comply with standards and regulations.</u> This objective would likely not be met due to sediment in storm water discharges to deep injection wells and waterways, impaired wastewater facilities, potential chemical releases to waterways or deep injection wells, impaired storm drain and flood control systems, lack of control of noxious weeds, and lack of control of invasive plant species resulting in inability to achieve soil stabilization with vegetation.</p> <p><u>Use fiscal resources efficiently.</u> This objective would most likely not be met due to expenditure of funds to fight large frequent fires, annually blade and mow near facilities, operate impaired wastewater facilities, repair flood damage, repeated attempts to achieve soil stabilization with vegetation in an unstable watershed with infestations of invasive plant species and noxious weeds, and payment of environmental fines.</p> | <p>become trails, lack of restoration, and minimal dust suppression.</p> <p><u>Protect water utilities.</u> This objective would not be met due to lack of vegetation management and lack of sediment control adjacent to waterways and wastewater facilities.</p> <p><u>Comply with standards and regulations.</u> This objective would likely not be met due to sediment in storm water discharges to deep injection wells and waterways, impaired wastewater facilities, potential chemical releases to waterways or deep injection wells, impaired storm drain and flood control systems, lack of noxious weed control, and lack of control of invasive plant species resulting in inability to achieve soil stabilization with vegetation.</p> <p><u>Use fiscal resources efficiently.</u> This objective would not be met due to expenditure of funds to fight large frequent fires, annually blade and mow, operate impaired wastewater facilities, repair flood damage, repeated attempts to achieve soil stabilization with vegetation in an unstable watershed with infestations of invasive plant species and noxious weeds, and payment of environmental fines.</p> |
| Wildlife / Habitat Resources | | | |
| <p>Alternative 1 would not meet all natural resource management objectives because of pre-fire, suppression, and post-fire and their associated activities. Although wildland fire management under this alternative may protect ecological resources from wildland fire, it will not protect the unique large, ecologically continuous sagebrush ecosystem from destruction. The impacts of this alternative on specific management objectives are:</p> <p><u>Limit the size of wildland fires.</u> This objective may be met under this alternative if the planned firebreaks are effective. Green (1977) recommends using firebreaks that are a minimum of 300 ft wide.</p> | <p>Alternative 2 would meet most natural resource management objectives. Wildland fire management under this alternative should protect ecological resources from wildland fire and will protect resources from pre-fire, fire suppression, and post-fire activities through mitigation strategies and MIST. The impacts of this alternative on specific management objectives are:</p> <p><u>Limit the size of wildland fires.</u> If Balanced Fire Protection Approach is taken, this objective will be met since limitation of fire size is an integral goal of this approach.</p> | <p>Alternative 3 would not meet all natural resource management objectives because of fire suppression and its associated activities. Wildland fire management under this alternative may protect ecological resources from unwanted fire but will not protect resources from pre-fire, suppression, and post-fire activities. The impacts of this alternative on specific management objectives are:</p> <p><u>Limit the size of wildland fires.</u> If no action is taken other than protection of human life and property under this scenario, then this objective cannot be met.</p> | <p>Alternative 4 would not meet all natural resource management objectives because of fire suppression and its associated activities. Wildland fire management under this alternative may protect ecological resources from wildland fire, but will not protect resources from pre-fire and suppression activities. The impacts of this alternative on specific management objectives are:</p> <p><u>Limit the size of wildland fires.</u> This objective is unlikely to be met under the current fire management regime. Limiting the size of fires can be controlled by two factors: reducing the probability of a fire reaching woody fuel (shrubs) and reducing</p> |

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| <p>Because the proposed firebreaks on T-roads are only 32 ft wide, it is unlikely they will be capable of stopping a fire. It should also be noted that the blocks created by the proposed firebreaks are still quite large. Relying on these firebreaks to control fire size will still result in large fires. Mowing only 12 ft either side of the major paved roads is also unlikely to limit the spread of a fire ignited on or near the road from spreading. Another approach to reducing fire size is to decrease the response time to the fire. The only activity designed to accomplish this is to improve the condition of certain T-roads.</p> <p><u>Promote a return to natural fire cycle and landscape-scale ecosystem diversity.</u> If the proposed firebreaks can control fire size, it might be possible to facilitate a return to a normal fire cycle (80 to 100 years).</p> <p><u>Eliminate the need for rehabilitation following fire suppression.</u> Because the alternative calls for 24-foot wide containment lines cut around the fire, rather than only that necessary, the need for rehabilitation is increased.</p> <p><u>Protect threatened, endangered, and sensitive species and their habitat.</u> Creating firebreaks in pristine areas reduces and fragments habitat resulting in this objective not being met. Identifying key habitat areas will aid in attempting to reduce fragmentation of habitat needed by protected species.</p> <p><u>Protect sage grouse and other sagebrush-obligate species and their habitat.</u> Pre-fire, and fire suppression activities under Alternative 1 will not meet this objective due to increased fragmentation and removal of native vegetation needed for sagebrush-obligate species survival.</p> <p><u>Prevent habitat loss and habitat fragmentation.</u> If the firebreaks work to reduce fire size, then habitat loss may be prevented. However, those same firebreaks also cause significant habitat</p> | <p><u>Promote a return to natural fire cycle and landscape-scale ecosystem diversity.</u> If fire size is not addressed, it is unlikely that a return to a normal fire cycle (80 to 100 years).</p> <p><u>Eliminate the need for rehabilitation following fire suppression.</u> With the use of narrower containment lines and the use of MIST, rehabilitation needs should be reduced.</p> <p><u>Protect threatened, endangered and sensitive species and their habitat.</u> Not creating large pre-fire firebreaks and the use of MIST means that direct loss of habitat and fragmentation impacts are reduced in this alternative. Additional habitat loss due to larger fires would likely be minimal.</p> <p><u>Protect sage grouse and other sagebrush-obligate species and their habitat.</u> Not creating large pre-fire firebreaks and the use of MIST means that direct loss of habitat and fragmentation impacts are reduced in this alternative. Additional habitat loss due to larger fires would likely be minimal.</p> <p><u>Prevent habitat loss and fragmentation.</u> This objective likely can be partially met under this alternative by minimizing impacts from pre- and post-fire, use of MIST, and mitigating impacts, which may occur.</p> <p><u>Protect culturally significant species.</u> This objective can be met under this alternative for most species by following appropriate fire suppression and rehabilitation techniques.</p> <p><u>Maintain a large undeveloped, sagebrush steppe ecosystem.</u> This objective may be met under this alternative due to the application of, and the elimination of pre-fire firebreak construction.</p> <p><u>Maintain plant genetic diversity.</u> Because the greatest risk to plant genetic diversity will result from improper revegetation planning, and since this alternative includes rehabilitation, this alternative will</p> | <p><u>Promote a return to natural fire cycle and landscape-scale ecosystem diversity.</u> If fire size is not addressed, it is unlikely that a return to a normal fire cycle (80 to 100 years) is possible. Recent large fires (since 1994) suggest that the entire INEEL could burn within 35 years. We have also seen areas burned in 1995 and 1996, burn a second time in 1999. Because this alternative does not include fire control beyond that necessary to protect infrastructure and people, this problem will likely be made worse. Under these conditions it is likely that fire return intervals will be much less than that necessary to support Wyoming big sagebrush.</p> <p><u>Eliminate the need for rehabilitation following fire suppression.</u> Meeting this objective will depend upon the fire suppression techniques used. If fire suppression is eliminated, then this objective will be met. If fire suppression is used, the suppression techniques will determine the level of rehabilitation required. However, because this alternative does not include any restoration, any need for rehabilitation will not be met.</p> <p><u>Protect threatened, endangered, and sensitive species and their habitat.</u> Eliminating fire suppression could result in significant habitat loss to uncontrolled fires. Meeting this objective will require managing fire suppression activities to minimize impact and proper rehabilitation of those sites.</p> <p><u>Protect sage grouse and other sagebrush-obligate species and their habitat.</u> This objective likely cannot be met under this alternative because it fails to address the need to reduce the size of wildfires so that large areas of sagebrush habitat are not lost.</p> <p><u>Prevent habitat loss and fragmentation.</u> Protecting only people and infrastructure will likely result in large areas of lost sagebrush habitat. Any containment lines or firebreaks constructed will likely result in fragmentation (see Appendix C, Habitat Fragmentation as a Result of Fire Suppression).</p> | <p>the response time to a fire. The activities outlined in this alternative are primarily designed for defense of facilities rather than limiting the size of wildfire. Mowing vegetation along the major paved roads is a notable exception. However, if only a 5-ft-wide strip is mowed, this is unlikely to slow spread to nearby shrubs. There is no activity mentioned designed to reduce response time.</p> <p><u>Promote a return to natural fire cycle and landscape-scale ecosystem diversity.</u> If fire size is not addressed, it is unlikely that a return to a normal fire cycle (80 to 100 years) is possible. Recent large fires (since 1994) suggest that the entire INEEL could burn within 35 years. We have also seen areas burned in 1995 and 1996, burn a second time in 1999. Under these conditions it is likely that fire return intervals will be much less than that necessary to support Wyoming big sagebrush.</p> <p><u>Eliminate the need for rehabilitation following fire suppression.</u> Because the alternative calls for "double containment lines" cut around the fire, rather than only that necessary, and the construction of "emergency firebreaks," the need for rehabilitation is increased. However, because this alternative does not include any restoration, any need for rehabilitation will not be met.</p> <p><u>Protect threatened, endangered and sensitive species and their habitat.</u> Using proper fire suppression techniques and reducing habitat fragmentation through suppression may better meet this objective. Meeting this objective will require managing fire suppression activities to minimize impact and proper rehabilitation of those sites.</p> <p><u>Protect sage grouse and other sagebrush-obligate species and their habitat.</u> This objective likely cannot be met under this alternative because it fails to address the need to reduce the size of wildfires so that large areas of sagebrush habitat are not lost. Habitat fragmentation will likely result, due to construction of the doublewide containment lines</p> |

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| <p>fragmentation. Also, back burning and burnouts cause additional habitat loss.</p> <p><u>Protect culturally significant species.</u> This objective may not be met due to the fragmentation and habitat loss that pre-fire activities will cause. Following appropriate fire suppression and rehabilitation techniques, this objective could be met.</p> <p><u>Maintain a large undeveloped sagebrush steppe ecosystem.</u> This objective cannot be met due to pre-fire activities under this alternative. Firebreak construction and T-road improvement will fragment large blocks of sagebrush habitat. Also, improving roads in order to allow for better vehicle access will likely increase human use of these areas and may open desirable areas for potential development. Fire suppression activities may meet this objective if fire control methods were designed to reduce fire initiation and size and minimize the impacts of the selected suppression activities.</p> <p><u>Maintain plant genetic diversity.</u> This objective can be met under this alternative by using local, native seed sources during rehabilitation.</p> <p><u>Protect unique ecological research opportunities.</u> The most significant “unique ecological research opportunities” are related to the large, undeveloped, unfragmented sagebrush steppe found on the INEEL. These attributes are not necessarily maintained by this alternative and, therefore, this objective may not be supported by this alternative.</p> <p><u>Prevent invasion of non-native species including noxious weeds.</u> Disturbance of soil increases the opportunity for non-native or noxious weeds to become established. This objective can be met under this alternative if proper restoration and weed control procedures are used and the impacted areas are kept as small as possible.</p> | <p>allow this objective to be met for the majority of species as long as a proper revegetation planning is conducted.</p> <p><u>Protect unique ecological research opportunities.</u> The most significant “unique ecological research opportunities” are related to the large, undeveloped, unfragmented sagebrush steppe found on the INEEL. These sagebrush attributes are more likely maintained by this alternative because of the elimination of the pre-suppression firebreak construction.</p> <p><u>Prevent invasion of non-native species including noxious weeds.</u> This objective may be able to be met under this alternative because it includes restoration following fire or fire suppression activities.</p> | <p><u>Protect culturally significant species.</u> This objective can be met under this alternative for some species by following appropriate fire suppression and rehabilitation techniques. Any sagebrush-obligate species, however, are not protected by this alternative.</p> <p><u>Maintain a large undeveloped, sagebrush steppe ecosystem.</u> This objective will be difficult to meet under this alternative. This is primarily because it does not provide sufficient control on limiting the size of fires.</p> <p><u>Maintain plant genetic diversity.</u> Because the greatest risk to plant genetic diversity will result from improper revegetation planning, and since this alternative does not include any rehabilitation, this alternative will allow this objective to be met for all species except those, like big sagebrush, that are killed by fire.</p> <p><u>Protect unique ecological research opportunities.</u> The most significant “unique ecological research opportunities” are related to the large, undeveloped, unfragmented sagebrush steppe found on the INEEL. These sagebrush attributes are not necessarily maintained by this alternative and, therefore, this objective may not be supported by this alternative.</p> <p><u>Prevent invasion of non-native species including noxious weeds.</u> This objective may not be met under this alternative because it includes no restoration following fire or fire suppression activities. Including restoration activities is the only way to ensure invasive species have been controlled.</p> | <p>and emergency firebreaks.</p> <p><u>Prevent habitat loss and fragmentation.</u> It is unlikely that this objective will be met under this alternative. Habitat loss and fragmentation can be caused both by suppressing fires and by letting fires burn. Uncontrolled fires generally do not fragment habitat, but tend to eliminate large habitat areas. Construction of containment lines and emergency firebreaks will result in fragmentation (see Appendix A, Habitat Fragmentation as a Result of Fire Suppression).</p> <p><u>Protect culturally significant species.</u> This objective can be met under this alternative for some species by following appropriate fire suppression and rehabilitation techniques. Any sagebrush-obligate species, however, are not protected by this alternative.</p> <p><u>Maintain a large undeveloped, sagebrush steppe ecosystem.</u> This objective will be difficult to meet under this alternative. This is primarily because it does not provide sufficient control on limiting the size of fires.</p> <p><u>Maintain plant genetic diversity.</u> Because the greatest risk to plant genetic diversity will result from improper revegetation planning, and since this alternative does not include any rehabilitation, this alternative will allow this objective to be met for all species except those, like big sagebrush, that are killed by fire.</p> <p><u>Protect unique ecological research opportunities.</u> The most significant “unique ecological research opportunities” are related to the large, undeveloped, unfragmented sagebrush steppe found on the INEEL. These sagebrush attributes are not necessarily maintained by this alternative and, therefore, this objective may not be supported by this alternative.</p> <p><u>Prevent invasion of non-native species including</u></p> |

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| | | | <u>noxious weeds</u> . This objective may not be met under this alternative because it includes no restoration following fire or fire suppression activities. Including restoration activities is the only way to ensure invasive species have been controlled. |
| Cultural Resources | | | |
| Alternative 1 would not meet all of the cultural resource management objectives. Although Alternative 1 would likely result in damage to cultural resources, advanced planning and coordination would allow for the development of mitigation and management plans that would contribute to the identification, evaluation and protection of cultural resources. | Alternative 2, would not meet all of the cultural resource management objectives. However, by limiting the size of wildland fires, damage to cultural resources would be reduced by restricting the use of off-road emergency equipment, construction of containment lines and firebreaks, and the construction of staging areas. | Alternative 3 in many ways meets all of the cultural resource objectives. Damage caused by fire management and recovery activities, such as firebreak emplacement, blading, mowing vegetation, grubbing, and re-seeding or off-road travel is eliminated or greatly reduced; thus, Alternative 3 would result the least impact cultural resources. | Alternative 4 would most likely result in the most damage to cultural resources because of the lack of opportunity for planned mitigation before fire suppression activities; thus, does not meet cultural resource goals. |